AED

Academy for Educational Development

ARMENIA ENERGY TRAINING PROGRAM

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Technical Report

Corporate Financing

June 24, 1999

Submitted to U.S. Agency for International Development

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with Hagler Bailly Services

ARMENIA ENERGY SECTOR TRAINING PROGRAM
Technical Report
Corporate Financing Seminar #8

USAID Strategic Objective 1.5	A more economically sustainable and environmentally sound energy sector
Intermediate Result 2	Increased economic efficiency in the energy sector
Participant profile	Armenia's energy companies, government ministries and regulatory entities with competence over the energy sector

A. Course Purpose

The workshop's main was to familiarize the participants with the basic principles of corporate financing and project financing to help support the privatization and investment promotion process underway in the power sector. Although more participants were expected, from hindsight it could be said that eight participants may have been optimum in that there was very good interaction and in-depth discussion.

B. Dates/Trainers/Attendees

The course was conducted June 10-11, 1999. Bhamy Shenoy was the lead trainer.

#	Name	Employer	June 10	June 11
1	Gagik Thokmajyan	Ministry of Finance	o	o
2	Armen Martirosyan	Ministry of Finance	o	o
3	Khachik Shaboyan	Institute of Energy	o	o
4	Artak Tovmasyan	Institute of Energy	o	o
5	Anahit Avetisyan	Energy Regulatory Commission		o
6	Haroutyun Keshishyab	Razdan TPP	o	o
7	Gohar Kotchibroyan	Northern DisCo	o	
8	Knarisk Avetisyan	Armenergo	o	o
9	Aleksander Korkotyan	Armenergo	o	o
		TOTAL	**8**	**8**

C. Material Covered

The course covered a number of concepts dealing with corporate and project financing with varying level of depth over the two days. Emphasis was placed on training the participants on the fundamental concepts such as the time value of money, evaluation of capital projects using internal rate of return (IRR), capital productivity index (CPI), net present value (NPV), computing the cost of capital, estimating various types of risk and reflecting them in the cost of capital, etc.

A number of examples on various energy projects around the world were discussed to teach the participants the basics of project financing. They were told how project financing differs from the traditional recourse financing based on the balance sheet of the company and what are the fundamental prerequisites to secure project financing, The projects discussed were: a power distribution project in Thailand, the Conoco/Maraven heavy oil project in Venezuela, Sonatrach Pipeline project from Algeria to Spain through Morocco and the Trans-Caspian gas pipeline project. Towards the end, there was an in-depth discussion on how project financing could be used for rehabilitation of a hydropower generating station in Armenia

D. Participant Evaluations

- The participants were extremely satisfied with the quality of the translation/interpretation, noting only occasional difficulties with comprehension.

- Most of the participants believe that the course will be very useful for them, and that it was conducted at their level of expertise. While slightly under 70% of those who participated considered the program to be directly relevant to their work, the remaining participants did not. Slightly less than one-half of the participants indicated that they do not anticipate that they'll be able to apply what they learned in their work. These figures suggest that not all of the attendees may have been the most appropriate people from their organizations to attend the course. AED will continue to monitor this issue over the remainder of the courses to ensure, to the extent possible, that course attendees are those who will benefit from most from the material presented.

- Several participants stated that the course was too short and that they would like further practical examples.

E. Anticipated Outcomes

Short Term: There is no need to calculate IRRs or NPVs by hand today because of the ease of doing them using calculators or PCs. Still it is a useful exercise to calculate them by hand to: 1) improve understanding of the concept and 2) to demonstrate how discount factors will affect the economic viability of an investment or project. As a result of doing the homework, most of the participants have developed the ability to compute IRRs and NPVs, as well as the cost of capital, by hand, and have, commensurately, developed an increased understanding of the concepts and how they are used.

Long Term: Participants have developed the appreciation for the need to have higher returns for projects with higher risk factors. They were given many examples to learn about different kind of risks like political risks, currency exchange rate changes, market risks (e.g., inflation rate, interest rate, economic shocks), industry risks (e.g., technical risk, legal risk, commodity risk), and project specific risks (e.g., competitive risk, estimation risk, failure to execute).

Participants have also learned that companies with a AAA rating pay a lower interest rates for bonds than do companies with poorer ratings, and that the interest rates rise in direct proportion to the drop in credit rating. The course has provided insights into the need for good credit ratings, on both corporate and national levels, to ensure attractive interest rates from the international debt market.

Course participants indicated that, after attending the course, they now have the confidence to prepare a complete project evaluation package consisting of market analysis, estimating demand, pricing, evaluation of operating cost, estimating investment cost, estimating cashflows, hurdle rate, etc.

F. Conclusions and Recommended Follow-up

Corporate financing is an important area for Armenia's power sector entities as the proposed restructuring moves forward. This seminar was designed to provide an introduction to and overview of the various issues. The participants expressed interest in follow-up training, and in continuing to receive information about and assistance in this area.

To reinforce the topics taught during the workshop, it would be useful to have a follow-up session of one full day or at least a half a day after two or three months. After assessing how the booklet on DCF analysis has been received by the participants, USAID should consider the possibility of distributing the booklet to a larger audience to help popularize the use of discounted cashflow analysis.

Further, give the subject matter and need for basic skills development, it could be useful to conduct additional courses in this area. These courses could specifically focus on Armenian initiatives, such as in the privatization area, and demonstrate the modeling techniques and financing principles involved.

APPENDIX A

Seminar Outline

Corporate Financing

Day 1:

Objective of the workshop and introduction of participants

Different ways of meeting Corporate Financing needs:
- Equity vs. debt financing. Cost of equity vs. debt financing.
- Sources of equity and debt financing. Optimal capital structure for a company.
- Recourse vs. non-recourse financing. Risk involved in financing.
- Rating of debts by independent agencies to reflect different risks.

What is project financing? How does it differ from other forms of financing. Sources for project financing. Examples of project financing.

How to evaluate project economics and the need to evaluate project economics.

How to use discounted cashflow analysis to measure the profitability of projects?

Time value of money, criteria to evaluate projects, estimating net present value, Internal rate of return (IRR) vs. Net Present Value (NPV), how to evaluate risk, relationship between return and risk.

Examples of calculating IRRs and NPV.

At the end of the day homework will be given for the participants to reinforce the concepts taught during the day.

Day 2:

Reviewing the concepts taught the previous day by going over the homework.

How to evaluate a typical project and what are the steps involved in developing project economics? Example of a new small private power project will be used to illustrate these concepts.

Participants would be encouraged to describe their experience of implementing actual projects and discussion would take place to apply the techniques learned to each such projects. Discussion will also take place to explore various possible ways to raise capital.

Course wrap up and evaluation.

APPENDIX B

Seminar Materials

Corporate Financing

PROJECT FINANCING

Dr. Bhamy V. Shenoy

Fundamentals of Project Financing

- Recourse financing: lenders have access to the assets of the entire company.
- Non-recourse Financing or off balance sheet financing: Lenders have access to the assets of the project only
- Equity Financing: provided by shareholders
- Debt financing: provided by financiers

Sources of Equity Funding(20 to 40% of the project costs)

- Sponsor’s own capital
- Multilateral Institutions
- International equity markets
- Local capital markets
- Investment funds
- Governments

Sources of Debt Funds(60 to 80% of project costs)

- Institutional investors
- International commercial banks
- International Finance corporation and regional development banks (ADB,EBRD)
- Local Banks and Bond Markets
- Suppliers' credit
- Specialized Energy Funds
- Multilateral institutions, regional banks, and bilateral agencies

Project Financing-Project Risk

- Identification, analysis, mitigation and allocation of risk
- Risk during project preparation, plant construction, and plant operation
- Risks initially borne by Sponsors
- Financial Engineering consists of guarantees, borrowing, and mobilization of equity.

Challenges in Developing Countries For Project Financing

- Limited Domestic resources-skilled labor, raw materials, and infrastructure
- Need For Foreign Capital
- Need to convince investors on the safe, efficient and profitable use of funds which can be repatriated.
- Business environment, political and economic stability, legal and regulatory system, and labor discipline

Concerns For Project Financing In Developing Countries

- Deficiencies in Institutional and Organizational Structures
- Lack of transparency in legal and regulatory system
- Economic and political insecurity
- Excessive construction and operation costs
- price and market risks
- repatriation of investments and profits

Project Financing & Political Risk

- Expropriation
- Failure by Host Govt.. to live upto prior commitments
- Civil Unrest
- War
- Expatriation of Profits
- Inconvertibility of national currency

Changes In Project Financing

- Financing Pre-1970
- Most projects by International Oil Companies:
- Their low debt to equity ratio, funds from internal cash flow
- If needed borrowed from banks

Project Financing in 70s and early 80s

* Reduced role of IOCs
* Increasing role of governments in both oil exporting and importing countries
* National Security Concern
* Funding from Multilateral and Bilateral agencies
* Continuing Funding From Commercial Banks

Project Financing in the 1990s

- Drop in World oil prices and less concern for energy supplies
- Reduced role of govt.. in oil exporting and importing countries
- Need for higher returns for IOCs
- Stringent conditions on International banks for lending

Financing Sources For Energy Projects

- Multilateral Development Institutions: World Bank, International Finance Corporations, Regional Development Institutions (ADB)- limited to $10 billion
- Bilateral agencies: Export-import banks of Industrialized countries-national interests
- Commercial Finance: Equity and debt funds, Bond Markets, specialized energy Funds, Commercial Banks

Financing Sources For Energy Projects(Cont'd)

- Ad hoc sources: Project Contractors, Equipment Suppliers' credit, purchasers of output, subsidies (tax holidays, exemptions from custom duties) by governments.

Hedging of Operational Risks

- Guarantees for Equipment Performance
- Supply guarantee for fuel source at defined prices.
- Take or pay contract
- Guaranteed returns
- Guarantees against political risks from multilateral and bilateral agencies

Rating Strcture by Moody and S&P

MOODY	S&P
AAA	Aaa
AA	Aa
A	A
BBB	Baa
BB	Ba
B	B
CCC	Caa
CC	Ca
C	C
D	D

Designing Project Package

- Analyze Business Environment
- Analyze potential demand
- Project future prices for project output
- Assess O&M costs
- Assess investment to take care of environmental protection needs
- Establish Project Viability
- Structure Financing Package

Environmental Assessments

- Executive Summary
- Introduction
- Legal, regulatory, and policy considerations
- Description of project
- Description of baseline environment
- Potential impacts of the project
- Environmental management and mitigation plan
- Monitoring Plan